Assessment Literacy Phase III:
The Art and Science of Teaching

Presented by Marzano Research
for
Wyoming Department of Education
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OUTCOMES

Participants will:

- learn about an instructional framework for designing high-quality classroom instruction that increases the likelihood that students will master the content of the standards;
- deepen understanding of research-based elements of instruction; and
- explore formal and informal options for assessing student learning and using the results to plan next steps for supporting all learners.

"Educational research suggests that the single most influential component of an effective school is the individual teachers within the school."

~Robert J. Marzano~

Three Critical Interventions (COMMITMENTS):

- A system of individual clear learning goals connected to student feedback and evaluation at the classroom, school, and district levels
- Ensuring effective teaching in every classroom
- Building background knowledge for all students

THE NEW ART AND SCIENCE OF TEACHING

FEEDBACK

Providing and Communicating Clear Learning Goals
1. Providing Scales and Rubrics
2. Tracking Student Progress
3. Celebrating Success

Assessment
4. Informal Assessments of the Whole Class
5. Formal Assessments of Individual Students

CONTENT

Direct Instruction Lessons
6. Chunking Content
7. Processing Content
8. Recording and Representing Content

Practicing and Deepening Lessons
9. Structured Practice Sessions
10. Examining Similarities and Differences
11. Examining Errors in Reasoning

Knowledge Application Lessons
12. Engaging Students in Cognitively Complex Tasks
13. Providing Resources and Guidance
14. Generating and Defending Claims

Strategies That Appear in All Types of Lessons
15. Previewing
16. Highlighting Critical Information
17. Reviewing Content
18. Revising Knowledge
19. Reflecting on Learning
20. Purposeful Homework
21. Elaborating on Information
22. Organizing Students to Interact

CONTEXT

Engagement
23. Noticing When Students Are Not Engaged and Reacting
24. Increasing Response Rates
25. Using Physical Movement
26. Maintaining a Lively Pace
27. Demonstrating Intensity and Enthusiasm
28. Presenting Unusual Information
29. Using Friendly Controversy
30. Using Academic Games
31. Providing Opportunities for Students to Talk About Themselves
32. Motivating and Inspiring Students

Rules and Procedures
33. Establishing Rules and Procedures
34. Organizing the Physical Layout of the Classroom
35. Demonstrating "Withitness"
36. Acknowledging Adherence to Rules and Procedures
37. Acknowledging Lack of Adherence to Rules and Procedures

Relationships
38. Using Verbal and Nonverbal Behaviors that Indicate Affection for Students
39. Understanding Students' Backgrounds and Interests
40. Displaying Objectivity and Control

Communicating High Expectations
41. Demonstrating Value and Respect for Reluctant Learners
42. Asking In-Depth Questions of Reluctant Learners
43. Probing Incorrect Answers with Reluctant Learners

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┌────────────────┐     ┌────────────────┐     ┌────────────────┐
│   Effective    │     │   Specific     │     │                │
│  Application   │ ──▶ │    Mental      │ ──▶ │   Enhanced     │
│      of        │     │  States and    │     │    Student     │
│ Instructional  │     │   Processes    │     │   Learning     │
│   Strategies   │     │                │     │                │
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	Teacher Actions	Student Mental States and Processes
FEEDBACK	**Providing and Communicating Clear Learning Goals**	1. Students understand the progression of knowledge they are expected to master and where they are along that progression.
	Assessment	2. Students understand how test scores and grades relate to their status on the progression of knowledge they are expected to master.
CONTENT	**Direct Instruction Lessons**	3. When new content is being presented, students understand which parts are important and how the parts fit together.
	Practicing and Deepening Lessons	4. After new content has been presented, students deepen their understanding and develop fluency in skills and processes.
	Knowledge Application Lessons	5. After new content has been presented, students generate and defend claims through knowledge application tasks.
	Strategies That Appear in All Types of Lessons	6. Students continually integrate new knowledge with old knowledge and revise their understanding accordingly.
CONTEXT	**Engagement**	7. Students are paying attention, energized, intrigued, and inspired.
	Rules and Procedures	8. Students understand and follow rules and procedures.
	Relationships	9. Students feel welcome, accepted, and valued.
	Communicating High Expectations	10. Typically reluctant students feel valued and do not hesitate to interact with the teacher or their peers.

Structure of *The Art and Science of Teaching*

3	10	43

feedback (specific information provided to and from the teacher and learner to clarify and guide learning)

content (the ways in which lessons typically progress from direct instruction through use and review of the knowledge and skills being learned)

context (addressing the psychological needs of students—things like engagement, a sense of belonging, and high expectations)

These are suggested as considerations as a teacher plans daily lessons.

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➢ **Design areas with guiding design questions teachers ask themselves as they are planning for effective instructional units and the daily lessons within them**

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➢ 43 categories of instructional strategies (referred to as **elements**) embedded in the ten design areas embedded in three general categories.

➢ These 43 elements address instructional strategies that have been detailed in multiple and diverse sources.

➢ Each element involves multiple strategies.

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10 Design Areas and Design Questions

FEEDBACK	Design Area 1: **Providing and Communicating Clear Learning Goals**	How will I communicate clear learning goals that help students understand the progression of knowledge they are expected to master and where they are along that progression?
	Design Area 2: **Assessment**	How will I design and administer assessments that help students understand how their test scores and grades are related to their status on the progression of knowledge they are expected to master?
CONTENT	Design Area 3: **Direct Instruction**	When content is new, how will I design and deliver direct instruction lessons that help students understand which parts are important and how the parts fit together?
	Design Area 4: **Practicing and Deepening**	After content has been presented, how will I design and deliver lessons that help students deepen their understanding and develop fluency in skills and processes?
	Design Area 5: **Knowledge Application**	After content has been presented, how will I design and deliver lessons that help students generate and defend claims through knowledge application?
	Design Area 6: **Strategies That Appear in All Types of Lessons**	Throughout all types of lessons, what strategies will I use to help students continually integrate new knowledge with old knowledge and revise their understanding accordingly?
CONTEXT	Design Area 7: **Engagement**	What engagement strategies will I use to help students pay attention, be energized, be intrigued, and be inspired?
	Design Area 8: **Rules and Procedures**	What strategies will I use to help students understand and follow rules and procedures?
	Design Area 9: **Relationships**	What strategies will I use to help students feel welcome, accepted, and valued?
	Design Area 10: **Communicating High Expectations**	What strategies will I use to help typically reluctant students feel valued and comfortable interacting with me or their peers?

FEEDBACK

Providing and Communicating Clear Learning Goals

Element 1 *Providing Scales and Rubrics*	
Element 2 *Tracking Student Progress*	
Element 3 *Celebrating Success*	

FEEDBACK

Assessment

Element 4 *Informal Assessments of the Whole Class*	
Element 5 *Formal Assessments of Individual Students*	

Learning Goals

A statement of what students will know and be able to do. Dr. Marzano suggests two formats, one for declarative knowledge or information (represented as: "Students will understand…" and one for procedural knowledge or strategies, skills, and processes (represented as: "Students will be able to…").

STANDARD/LEARNING GOAL

The student will tell and write time from analog and digital clocks to the nearest five minutes.

The student will tell and write time from analog and digital clocks to the nearest five minutes.

Learning Target

Learning Target

Learning Target

Learning Target

The student will tell and write time from analog and digital clocks to the nearest five minutes.

The student will understand analog, clock, digital, minute, nearest, time, a.m., p.m.

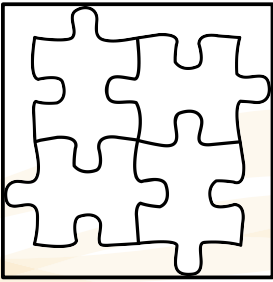The student will identify the hands on an analog clock.

The student will write time using the correct format.

The student will tell and write time from digital clocks to the nearest five minutes.

The student will count by 5s to 60.

The student will tell time to the hour, half-hour, and quarter-hour.

Each *learning target* is a "part" of the "whole" *academic standard/learning goal.*

IMPORTANT

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MEASUREMENT, DATA, STATISTICS, AND PROBABILITY

Time

Grade 2

Score 4.0	**In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught.** **The student will:** • solve real-world problems involving elapsed time • write correct digital time from an analog clock and the reverse	**Sample Activity:** **What Time Is It?** Materials: analog clock in the classroom Procedures: Periodically during the day, the student will tell and/or write the time, also indicating what he/she is doing at particular time of the school day.
Score 3.5	*In addition to score 3.0 performance, partial success at score 4.0 content*	
Score 3.0	**The student will:** • tell and write time from analog clocks to the nearest five minutes (2.MD.7)	
Score 2.5	*No major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content*	
Score 2.0	**The student will recognize or recall specific vocabulary, such as:** • analog, clock, digital, minute, nearest, time, a.m., p.m. **The student will perform basic processes, such as:** • tell and write time from digital clocks to the nearest five minutes (2.MD.7) • identify the hands on an analog clock • count by 5s to 60 • tell time to the hour, half-hour, and quarter-hour • Write time using the correct format	**Sample Activities:** **Beat the Timer Center Activity:** Materials: cards with different times to the five minutes; cards with digital clocks showing different times to the five minutes; egg timer Procedures: The student will match the times with the correct clock, trying to beat the egg timer.
Score 1.5	*Partial success at score 2.0 content, and major errors or omissions regarding score 3.0 content*	
Score 1.0	**With help, partial success at score 2.0 content and score 3.0 content**	
Score 0.5	*With help, partial success at score 2.0 content but not at score 3.0 content*	
Score 0.0	**Even with help, no success**	

Proficiency Scales

Score 4.0	In addition to exhibiting level 3 performance, in-depth inferences and applications that go BEYOND what was taught in class
Score 3.0	No major errors or omissions regarding any of the information and/or processes (SIMPLE OR COMPLEX) that were explicitly taught
Score 2.0	No major errors or omissions regarding the SIMPLER details and processes BUT major errors or omissions regarding the more complex ideas and processes
Score 1.0	With HELP, a partial knowledge of some of the simpler and complex details and processes
Score 0.0	Even with help, no understanding or skill demonstrated

Proficiency Scale "Look Fors"

Scales SHOULD be:
- ✧ Related to the learning goal
- ✧ Posted and able to be read by students
- ✧ Written in student-friendly language (when appropriate)
- ✧ Referenced during the lesson

Students SHOULD be able to explain:
- ✧ The meaning of the levels of performance articulated in the scale

The Five-Step Process for Developing Proficiency Scales

1) Determine the topic of the proficiency scale.
2) Determine the language of score 3.0 (the target learning goal).
3) Determine vocabulary related to the target learning goal and record it in score 2.0.
4) Determine prerequisite knowledge and skills and record it in score 2.0.
5) Discuss how a student might demonstrate a score 4.0 performance.

Topic:

Score 4.0 – More complex   Demonstrations of learning that go above and beyond what was explicitly taught   The learner will:
Score 3.0 – The target learning goal/expectation for all   The learner will:
Score 2.0 – The simpler stuff   Foundational knowledge, simpler procedures, isolated details, vocabulary   The learner will:
Score 1.0 - With help, the student can perform Score 2.0 and 3.0 expectations
Score 0.0 - Even with help, the student cannot perform expectations

EXAMPLE ASSESSMENT

Measurement Topic	Standards
Multiplication	**4.OA.1** Interpret a multiplication equation as a comparison. **4.OA.2** (first part) Multiply to solve word problems involving multiplicative comparison. **4.NBT.5** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

4.0	Select the quickest strategy to use to solve word problems that require multiplying whole numbers up to four digits by one-digit whole numbers or multiplying two two-digit numbers.
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
3.0	**1• Multiply to solve word problems involving multiplicative comparison.** **2• Explain how to multiply a whole number of up to four digits by a one-digit whole number and how to multiply two two-digit numbers.**
2.5	No major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content
2.0	1• Understand vocabulary such as multiply, comparison, word problem, equation. 1• Interpret a multiplication equation as a comparison. 1• Use arrays and equations to represent multiplication situations. 2• Understand vocabulary such as multiply, one-digit, two-digit, four-digit. 2• Multiply a whole number of up to four digits by a one-digit whole number. 2• Multiply two two-digit numbers.

MULTIPLICATION COMMON ASSESSMENT
Standards: 4.OA.1, 4.OA.2, 4.NBT.5

Part A:

1) Write an equation for the statement "161 is 7 times as many as 23."

$$23 \times 7 = 161$$

2) A factory makes 3,132 chairs each month. Write an equation that represents the total amount of chairs the factory makes in 9 months (you do not need to solve the equation).

$$3,132 \times 9 = \text{the number of chairs in 9 months}$$

3) $5,039 \times 8 =$ ___40,042___

3)	4)
5039 × 8 ——— 40,042	47 93 ——— 121 363 ——— 3751

4) $47 \times 93 =$ ___3,721___

Part B:

5) In one year, Janie sent 4,368 text messages. Tanner sent 4 times as many text messages as Janie. How many more text messages did Tanner send than Janie?

$$\begin{array}{r} 4,368 \\ \times \quad 4 \\ \hline 16,242 \end{array} \quad \text{messages}$$

I think the second way is faster cuz you don't have us much to write.

Part C:

Show at least two different ways to solve the following word problem, decide which way is quickest, and explain why you think so.

Casey spent 18 minutes coloring. She spent 16 times as long reading. How much time, in minutes, did Casey spend reading?

18 × 16 is the same as 10 × 10 added to 8×6

10 × 10 = 100 and 8×6 = 48

so 18 × 16 = (148)

see? the same

$$\begin{array}{r} 18 \\ \times 16 \\ \hline (148) \end{array}$$

Determining an Appropriate Summative Score for a Priority Standard

Student #1 Body of Evidence						
Standard(s)	Formative Score #1	Formative Score #2	Formative Score #3	Formative Score #4	Formative Score #5	Summative Score
Multiplication (4.OA.1, 4.OA.2, 4.NBT.5)	1.5	2.0	2.0	3.0	3.0	

Student #2 Body of Evidence						
Standard(s)	Formative Score #1	Formative Score #2	Formative Score #3	Formative Score #4	Formative Score #5	Summative Score
Multiplication (4.OA.1, 4.OA.2, 4.NBT.5)	2.0	3.0	3.5	3.0		

Student #3 Body of Evidence						
Standard(s)	Formative Score #1	Formative Score #2	Formative Score #3	Formative Score #4	Formative Score #5	Summative Score
Multiplication (4.OA.1, 4.OA.2, 4.NBT.5)	2.0	3.0	2.0	1.5	3.0	

| Student #4 Body of Evidence						
Standard(s)	Formative Score #1	Formative Score #2	Formative Score #3	Formative Score #4	Formative Score #5	Summative Score
Multiplication (4.OA.1, 4.OA.2, 4.NBT.5)	4.0	3.5	3.5			

Charting Class Progress

The teacher uses a whole-class tracking chart to create a snapshot of the progress of a group of students, such as the following.

Teacher Name: _Mrs. Josey_

Measurement Topic: _Persuasive Essays_

Class name/Subject: _Language Arts_   Grading period: _3rd Quarter_

Total number of students represented in graph: _95_

Date
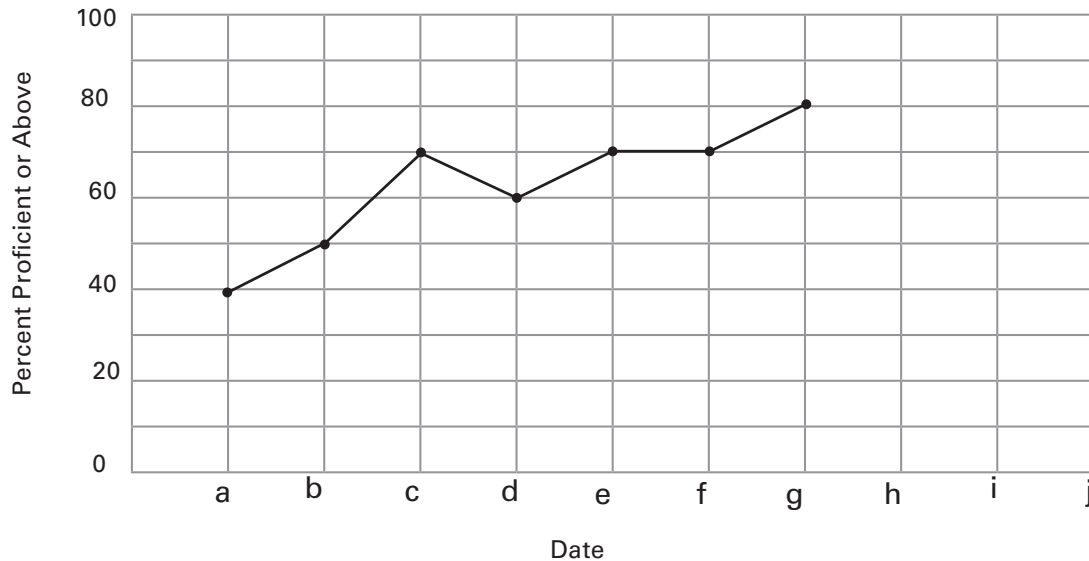
a. _Holiday Essay (Jan 12)_
b. _Pollution Essay (Jan 23)_
c. _Presidential Essay (Feb 3)_
d. _Valentine Essay (Feb 14)_
e. _Scientific Theory Essay (Feb 29)_
f. _Seasonal Essay (Mar 9)_
g. _Environmental Essay (Mar 21)_
h. _____
i. _____
j. _____

Tracking the progress of an entire class is different from charting the progress of a single student, primarily in that the chart typically shows what percentage of students scored at a proficient (3.0) level or above for a particular assessment. This type of aggregated data can provide teachers and administrators with a snapshot of the progress of entire grade levels or an entire school. Individual teachers or teams of teachers can use such aggregated data to identify future instructional emphases. If the aggregated data indicate that an insufficient percentage of students in a particular grade level are at or above the designated performance standard, then teachers at that grade level might mount a joint effort to enhance student progress for the measurement topic.

Teacher Actions

• Selecting data points for whole-class tracking

• Adjusting instruction based on whole-class progress

Charting Student Progress

The teacher provides students with charts on which they can record their progress on a learning goal over time, as in the following example.

Name: *Courtney*

Learning Goal: *Make and defend inferences about the Civil War.*

My score at the beginning: _1.5_ . My goal is to be at _3.0_ by _November 17_ .

Specific things I am going to do to improve: *Work 15 minutes three times a week*.
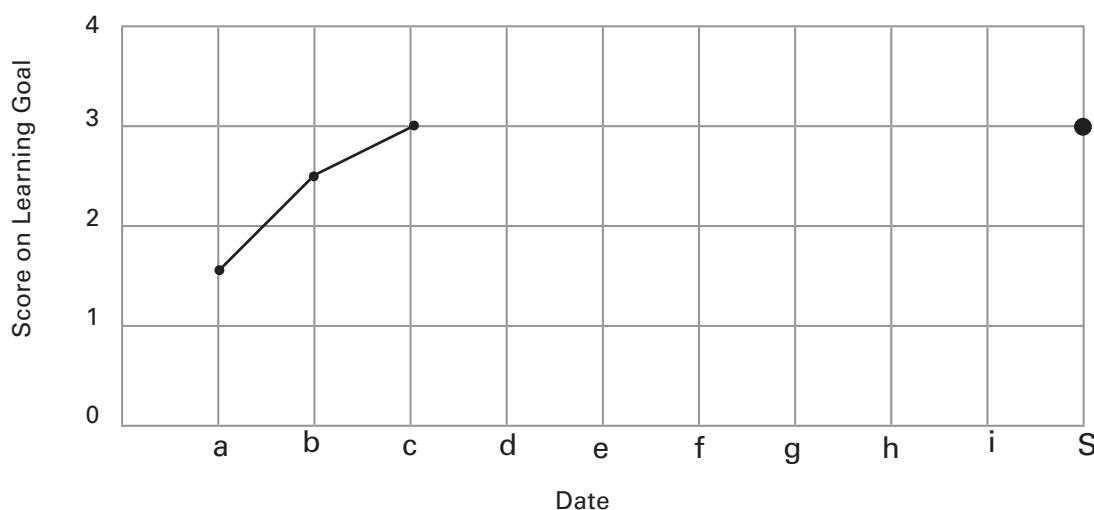
a. *September 12*   f. _____
b. *October 18*   g. _____
c. *November 9*   h. _____
d. _____ i. _____
e. _____ Summative Score: _3.0_

The student sets a goal relative to a specific scale at the beginning of a unit or grading period and then tracks her scores on that scale. At the end of the unit or grading period, the teacher assigns a final or summative score to the student for the scale (see column S in the figure).

Because formative scores are designed to provide a view of students' learning over time, it is useful to have students chart their own progress on the scale for each learning goal. To do so, the teacher provides a blank chart for each learning goal. Having each student keep track of his or her scores in this fashion provides a visual representation of his or her progress. It also allows for powerful discussions between teacher and students. The teacher can discuss progress with each student regarding each learning goal. Also, in a tracking system such as this one, the students and the teacher are better able to communicate with parents regarding the students' progress in specific areas of information and skill. Finally, note that the chart has places for students to identify the progress they wish to make and the things they are willing to do to make that progress.

DIRECT INSTRUCTION LESSONS

Element 6 *Chunking Content*	• Involves the teacher breaking the content into small chunks of information that can be easily processed by students
Element 7 *Processing Content*	• Involves the teacher using a variety of strategies to allow students to process new knowledge
Element 8 *Recording and Representing Content*	• Involves the teacher engaging students in activities that help them record their understanding of new content in linguistic and nonlinguistic ways

PRACTICING AND DEEPENING LESSONS

Element 9 *Structured Practice Sessions*	• Involves the teacher engaging students in practice activities that help them develop fluency
Element 10 *Examining Similarities and Differences*	• Involves the teacher helping students deepen their knowledge by examining similarities and differences between items
Element 11 *Examining Errors in Reasoning*	• Involves the teacher helping students deepen their understanding of informational content by having them examine their own reasoning or the logic of the information presented to them

Element #9: Structured Practice Sessions

Desired Effect: Students perform the skill, strategy, or process with increased skill or confidence.

How can I help students practice skills, strategies, and processes?

- ❑ Structure practice sessions spaced closely together.
- ❑ Plan for practice sessions that are gradually less structured and more varied.
- ❑ Plan for practice sessions that help students develop fluency.
- ❑ Consider cooperative learning strategies for practice activities. This can occur once students have engaged in some form of individual practice and then collaborate with peers to check their work an dialogue about what led to their correct/incorrect answer.

EXAMPLE OF CONTENT DELIVERY FOR A 50-MINUTE CLASS PERIOD INCLUDING PRACTICE

Chunk #1 7 minutes	Chunk #2 10 minutes	Chunk #3 13 minutes	Chunk #4 10 minutes	Chunk #5 10 minutes
Review of content from yesterday 5 minutes	New content 8 minutes	New content 10 minutes	Guided practice with close monitoring 8 minutes	Independent practice (once students demonstrate an adequate degree of success) 7 minutes
Processing opportunity 2 minutes	Processing opportunity 2 minutes	Processing opportunity 3 minutes	Processing opportunity 2 minutes	Processing opportunity 3 minutes

Element #10: Examining Similarities and Differences

Comparing is
- the process of identifying similarities and differences among or between things and ideas.
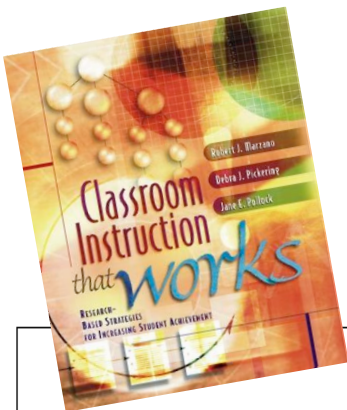
Classifying is
- the process of grouping things that are alike into categories based on their characteristics.

Creating Metaphors is
- the process of identifying a general or basic pattern that connects information that is not related on the literal or surface level.

Creating Analogies is
- the process of identifying the relationship between two sets of items.

Category	Average Effect Size	Percentile Gain
Identifying Similarities and Differences	1.61	45
Summarizing and Note-taking	1.00	34
Reinforcing Effort and Providing Recognition	.80	29
Homework and Practice	.77	28
Nonlinguistic Representations	.75	27
Cooperative Learning	.73	27
Setting Objectives/Providing Feedback	.61	23
Generating and Testing Hypotheses	.61	23
Questions, Cues, and Advance Organizers	.59	22

Literary Devices

Personification	Metaphor	Onomatopoeia	Hyperbole	Alliteration

love is a roller coaster

old as the hills

lightening dances across the sky

buzz

Fred's friends

did it a million times

buzzing bees

time is money

thump

book flew off the shelf

laughter is music to the soul

magnificent mountains

splash

dying of shame

flowers are begging for water

Element #11: Examining Errors in Reasoning
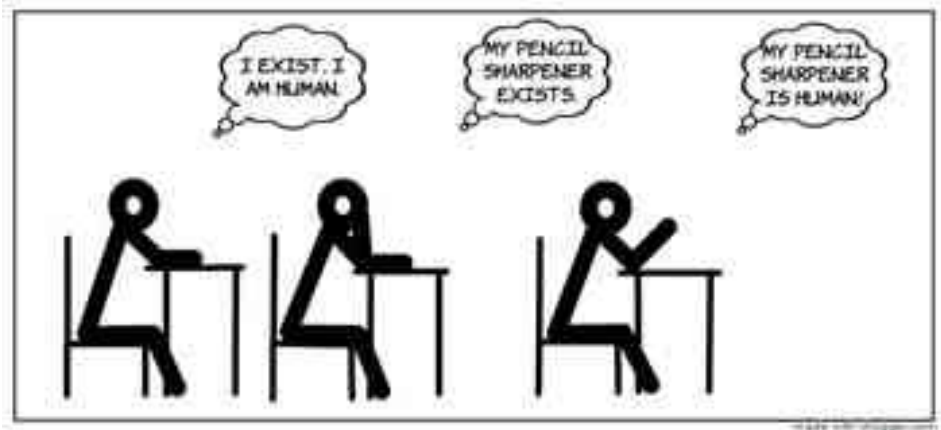
If students are able to examine their own reasoning, they:

❑ Can describe errors or informal fallacies in information.
❑ Can evaluate the efficiency of a process.
❑ Can explain the overall structure of an argument presented to support a claim.
❑ Can identify errors in reasoning.
❑ Can identify support for their perspectives using the appropriate evidence.
❑ Can identify the supports behind multiple perspectives.
❑ Can identify the evidence used to support the claim of others in presented information.
❑ Can identify and take various perspectives.

What We Can Do To Help Our Students Examine Their Reasoning

1. *Use authentic examples with students.* Collect examples of errors in reasoning from everyday life (newspapers, Internet, television, advertising, etc.). Use these examples to show students that faulty reasoning is everywhere. Invite students to bring examples to share in your classroom.

2. *Require students to provide justification*. Provide ongoing opportunities for students to explain their work and provide rationale for their processes and steps. Encourage multiple ways to solve problems and expect them to explain their thinking.

3. *Anticipate student errors and model them in the presentation of content.* Design lessons to incorporate common errors you anticipate students might make. Help them become aware of these common errors so that they can avoid pitfalls.

4. *Model and think aloud for students*.

5. *Give students enough "think time" to reason during class discussions.*

STRATEGIES THAT APPEAR IN ALL TYPES OF LESSONS

| **Element 15** *Previewing*	• Involves the teacher engaging students in activities that help them link what they already know to the new content about to be addressed and facilitates these linkages
Element 16 *Highlighting Critical Content*	• Involves the teacher identifying important information to which students should pay particular attention
Element 17 *Reviewing Content*	• Involves the teacher engaging students in a brief review of content that highlights the critical information
Element 18 *Revising Knowledge*	• Involves the teacher engaging students in a revision of their knowledge of content addressed in previous lessons
Element 19 *Reflecting on Learning*	• Involves the teacher engaging students in activities that help them reflect on their learning and the learning process
Element 20 *Purposeful Homework*	• Involves the teacher designing homework to help students deepen their knowledge of informational content or practice a skill, strategy, or process
Element 21 *Elaborating on Information*	• Involves the teacher asking questions or engaging students in activities that require elaborative inferences that go beyond what was explicitly taught
Element 22 **Organizing Students to Interact**	• Involves the teacher organizing students to interact in a thoughtful way that facilitates collaboration

Element #17: Reviewing Content

	Recording and Representing Content			Examining Similarities & Differences		Examining Errors in Reasoning
		Recording and Representing Content	Examining Similarities & Differences	Examining Errors in Reasoning		
	Chunking Content	Chunking Content	**The Art and Science of Teaching**	Previewing Content		Previewing Content
		The ASOT Framework	Organizing Students	Purposeful Homework		
The ASOT Framework			Organizing Students			Purposeful Homework

Element #18: Revising Knowledge

Five Steps for Revising Knowledge (example: using vocabulary notebook entry)	
1. Review/revisit prior understanding of content.	*"Look at your current vocabulary notebook entry and consider if there is anything you want to add or change."*
2. Identify and correct mistakes.	*"Examine your work carefully to see if you can find any mistakes. If you do, take time to fix the error."*
3. Identify gaps in knowledge and fill in the gaps.	*"Determine if there are things that are partially correct but need attention in order to be completely right."*
4. Decide where to amend prior knowledge.	*"Think about new things you have learned about this word since you last work on this vocabulary journal entry. Make changes to your work to show what you know now."*
5. Provide reasons for knowledge revisions.	*"Explain your thinking about the changes you made."*

Notes:

Element #20: Purposeful Homework
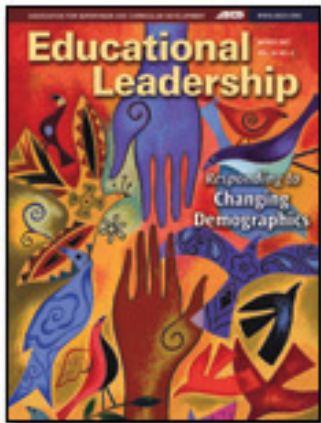
Special Topic / The Case For and Against Homework

Robert J. Marzano and Debra J. Pickering

http://www.ascd.org/publications/educational-leadership/mar07/vol64/num06/The-Case-For-and-Against-Homework.aspx

TYPES OF HOMEWORK

- Homework that **helps students deepen knowledge**

- Homework that **enhances students' fluency with procedural knowledge**

- Homework **that introduces new content**

Student Survey for Purposeful Homework

1. **My teacher gives me homework that helps me learn.**

Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

2. **My teacher always has a good reason for giving homework.**

Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

3. **My homework usually helps me practice a skill or explore information I learned in class.**

Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

4. **My teacher always gives very clear instructions about homework.**

Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

5. **My teacher always allows time for students to ask questions about the homework.**

Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

6. **My teacher discusses completed homework assignments with the class.**

Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

Element #21: Elaborating on Information

Elaborative Interrogation

The teacher probes a student's answer by asking elaborative questions which prompt the student to reflect on the nature of and justifications for their response. The teacher might ask "Why do you believe that to be true?" in order to stimulate a student to provide evidence to support his or her conclusion. Based on the student's response, the teacher asks the student to generate an if-then statement. After an if-then statement has been generated, the teacher asks the student if he or she might think differently about the original conclusion.

Example Elaborative Interrogation Questions

Questions that require students to provide evidence to support their conclusions:

- Why do you believe that to be true?
- What makes you think that?
- How do you know that is correct?
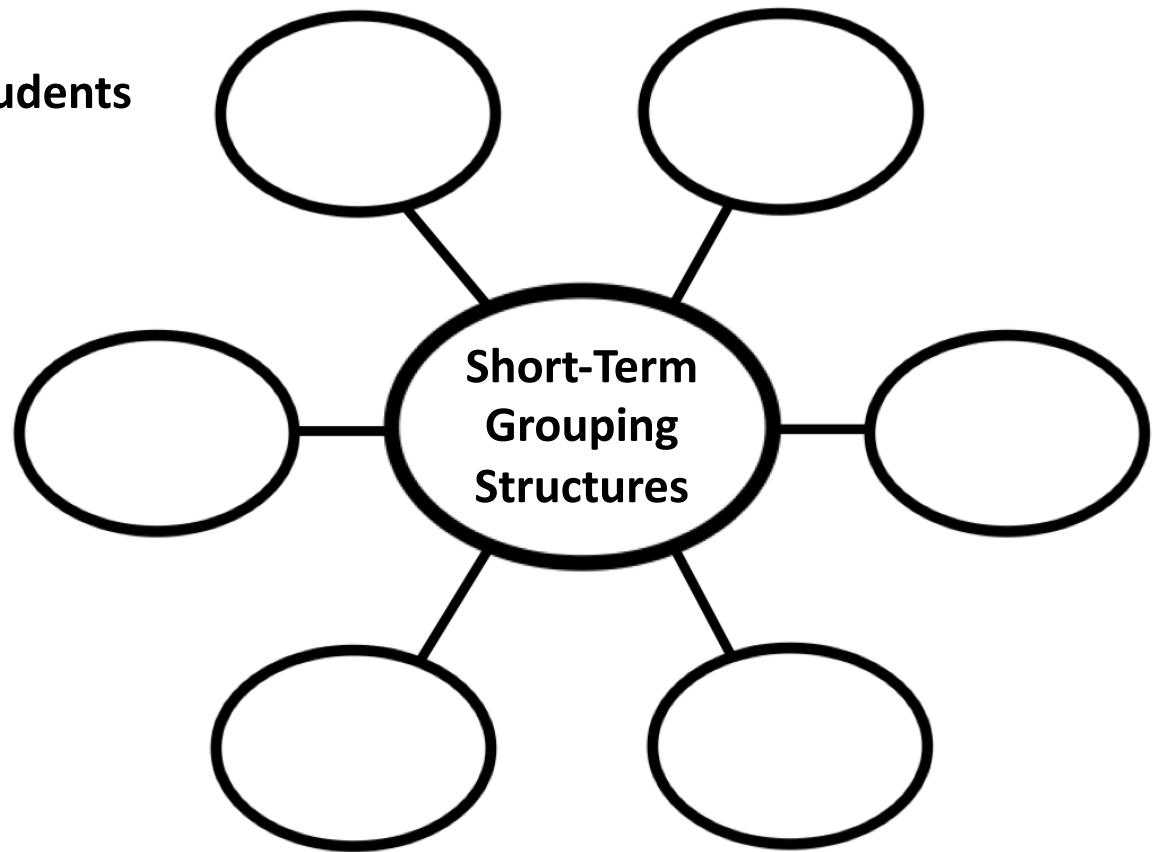- What evidence do you have for that conclusion?

Questions that help students make if-then generalizations about content:

- Based on what you've said, what would be an if-then statement that would be true?
- You've said that _____ is true. What else must be true then?
- If _____ happened, what else would have to happen?

Questions that require students to reconsider their original answer:

- Now that you've made an if-then statement, does the way you think about your answer change? How?
- What is another conclusion that you might have come to?
- Do you see things differently now? How?

Element #22:
Organizing Students
To Interact

```
                    (   )           (   )
                         \         /
            (   )         Short-Term         (   )
                 \        Grouping        /
                          Structures
                 /                        \
            (   )                          (   )
```

Long-Term Grouping Structures
(one class period or more)

1) **Heterogeneous** groups (varying ability levels)

2) **Homogeneous** groups (like ability levels)

3) Groups determined by **social behaviors** (similar or different)

MARZANO Research

DAILY LESSON PLAN

Unit: _____   **Week:** _____   **Day:** _____

What will I do to remind students about the instructional goals and how today's class fits into those goals?

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Will I use a "hook" or "bell ringer" in today's class?

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What type(s) of lessons will I use in today's class (Direct Instruction; Practicing and Deepening; Knowledge Application)?

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```
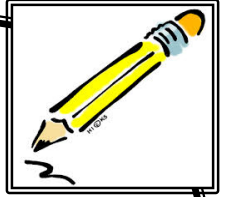
How will I assess students during the class period?
- **Instructional feedback at the whole class level**
- **Assessments of individual students**

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What activities will I use to ensure high engagement?

```



```

Are there specific students in class to whom I should pay particular attention and what actions will I take with those students?
- **Remind them of rules and procedures?**
- **Deliberately interact with the student to foster a positive relationship?**
- **Go out of my way to interact with reluctant learners?**

```



```

Notes

Notes